Chemistry
Chapter 4: Periodicity, Test Review List

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periodic law

electron configuration

valence shell and valence electrons

alkali metals, alkaline-earth metals, group 16 elements, halogens

- …reactivity, valence shell electrons

transition elements

- amalgam
- George Decker
- "Buried in Ice"
- coinage metals (group 11: copper, silver, gold) usually found free in nature
- galvanize

how atomic radius changes as we go up/down a group or left/right across the Table

natural elements

synthetic elements

nuclear fusion vs. nuclear fission

- nuclear reactions involve nuclei, whereas chemical reactions involve electrons
- nuclear reactions pack a **LOT** more punch

arithmetic of nuclear reactions

the mole

Avogadro's number: 6.022×10^{23}

"Island" diagram

conversion factors (put the symbol of any element in place of the XX)

- 1 mol XX = (number) g XX
- 1 mol XX = 6.022×10^{23} atoms XX

1. **According to what property did Mendeleev arrange the first periodic table? Who arranged the table as it now exists?**
2. **What is the similarity between the electron configurations of H, Li, and Na? What property of these elements can we explain because of this similarity?**
3. **What is the term for the outermost shell of electrons?**
4. **Which are more reactive, group 16 elements or the halogens? Explain your answer.**
5. **What term do we use to describe an alloy that contains mercury?**
6. **What illness did George Decker get because he inhaled mercury vapors?**
7. **What was the first clue that search team had that the individuals who were "Buried in Ice" were not playing with full decks?**
8. **What does the term "galvanize" mean?**
9. **Which has a bigger radius: A) O or S**

   B) O or F
10. **What is the natural element with the largest atomic number?**
11. **What is another term for "synthetic" elements?**
12. **Give one example of each: nuclear fission, nuclear fusion**
13. **Solve the following nuclear equation.**

$$^{12}_{6}C + {}^{231}_{91}Pa \text{ ---------- } 2\,{}^{1}_{0}n +$$

14. **Convert 34 g of carbon into number of atoms of carbon.**

    a) Convert 4.44×10^{18} atoms of neon into grams of neon.